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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,523	01/26/2005	Guy Marck	Q85512	7429
23373 7590 06/04/2008 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER LSTVOYB, GREGORY	
			ART UNIT 1796	PAPER NUMBER
			MAIL DATE 06/04/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/522,523

**Applicant(s)**

MARCK ET AL.

**Examiner**

GREGORY LISTVOYB

**Art Unit**

1796

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 3-17 is/are allowed.
- 6) ☒ Claim(s) 18 is/are rejected.
- 7) ☐ Claim(s) 19-41 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Beilstein (1988-2001 Beilstein Institut, cited in IDS) or Takao et al (US 6139927) herein Takao as evidenced by Crabtree et al (US 4725342) herein Crabtree (all references cited in the Previous Office Action).

Beilstein (see previous Office action) and Takao (Column 56, Example 20) disclose a diamine of Formula 1, where A1 and A2 are Nitrile, Ester, Acid, Alkyl (Beilstein) and Alkyl (Takao).

Crabtree evidences that even chemically inert alkanes can be dimerized photochemically (see Column 1, line 20). Specifically, Crabtree teaches dimerisation of Alkanes when exposed to Hg lamp irradiation at 254 nm (UV light) (see Examples, column 10, line 55).

Note that Claim language ("which can be photoisomerized and/or photodimerized on exposure to UV or laser light") permits the presence of any additional materials (catalysts, promoters, co-reactants, etc.) in the process

Therefore, all the diamines disclosed in Beilstein and diamine of Takao inherently can be photodimerized.

***Allowable Subject Matter***

Claims 3-17 allowed.

***Allowable Subject Matter***

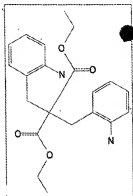
Claims 19-41 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments filed on 3/13/2008 have been fully considered but they are not persuasive.

Applicant argues that Crabtree discloses reaction conditions that are not applicable to the present compounds as they are in a vapor phase. This is incorrect. Claim language of claim 18 (specifically "which can be photoisomerized and/or photodimerized on exposure to UV or laser light") does not contain any restrictions for the dimerisation reaction.

Applicant argues that the Examiner has extrapolated the findings or conclusions for groups such as alkanes, ethers and alcohols to groups according to Beilstein and Takao such as acids, esters, nitriles and tertiary alkyl groups. This is incorrect. For instance, the following molecule, disclosed by Beilstein, contains Methylene and Methyl groups, which are reactive at Crabtree's conditions.



The Hydrogen abstraction can occur for the above groups.

Applicant argues that the photolysis described is not a very "controlled" reaction, i.e., the products obtained are a mixture of all possible combinations of primary, secondary and tertiary centers. First, even if one dimeric molecule forms, the limitations

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of Claim 18 are met. Second, Crabtree specifically teaches dimerisation of alkanes (see Column 1, line 5).

Applicant argues that Crabtree discloses that the reaction is under steric control, i.e., the reactivity diminishes with increasing steric hindrances. Again, if applied to the complex compounds of Beilstein and Takao, and the present invention, wherein A1 and A2 are linked to a tertiary or quaternary carbon atom, such a reaction would clearly be not feasible. This is incorrect. Methyl and Methylene groups of the above Beilstein molecule are not shielded by any other bulky group.

Applicant argues that the presence of aromatics and unsaturated aliphatics are not desirable for Crabtree reaction. However, the Claim 18 has a limitation "which can be photoisomerized and/or photodimerized", which is met even if one molecule is dimerised. Therefore, even if suppressed, the dimerisation reaction can occur, producing very small amount of dimer, meeting the limitations of Claim 18.

The changes of the claims, made as a result of the rejection under 35 USC 112(2) are noted. The above rejection is withdrawn.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/  
Primary Examiner, Art Unit 1796

GL